

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 8, 2010 has been entered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the oil repellent on the machined surface (see 35 USC 112 section below) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

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of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 2 and 5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 has been amended to recite "the molded surface of the outside surface has a first oil repellency, and the machined surface of the outside surface has a second oil repellency, wherein the first oil repellency is greater than the second oil repellency." The Applicants cite page 6 lines 9-13 and page 21 lines 12-23. Page 6 lines 9-13 does indeed provide support for an oil repellant applied to a machined surface to be inferior to an oil repellant applied to a molded surface in relation to prior art. However, the disclosure of Applicant's invention, page 21 lines 12-23, states that the oil repellent is

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applied to the molded outside surface 7a2 with no mention repellent being applied to the gate removal portion (machined surface) 7d1. Therefore, as originally filed, the specification only contained support for the Applicant's invention to have an oil repellent applied to the molded surface not the machined surface.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 5 are rejected under 35 U.S.C. 103(a), as best understood, as being unpatentable over Shishido, WO03/027521, in view of Fujinaka, US PGPub 2003/0113045, and further in view of Obara, US PGPub 2003/0202722.

Shishido discloses a fluid bearing device comprising a housing (56); a bearing sleeve (55) disposed inside the housing (56); a shaft member (51) inserted along an inner peripheral surface of the bearing sleeve (55); and a radial bearing portion (58) which supports the shaft member (51) in a non-contact manner in a radial direction via a lubricating oil film (57) that is generated within a radial bearing gap between the inner peripheral surface of the bearing sleeve (55) and an outer peripheral surface of the shaft member (51), wherein the housing (56) comprises a cylindrical side portion (61) and a seal portion (63) which forms a continuous integrated unit with the side portion (61, see Figure 46) and extends radially inward from one end of the side portion, the

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seal portion comprises an inner peripheral surface (65) which forms a sealing space with an opposing outer peripheral surface of the shaft member (at 67), and an outside surface (top surface of 63) which is positioned adjacent to the inner peripheral surface (65) and an outer peripheral edge (corner between 61 and 63) on the outside surface.

Shishido does not disclose a resin molded housing that the outer peripheral edge ('machined" surface) extends oblique relative to the longitudinal axis or that the outer peripheral edge is annular beveled ring in communication with the inner peripheral surface via the outside surface.

Fujinaka teaches a resin molded bearing housing (2) having an outer peripheral edge (see upper portion of Figure 2) that extends oblique relative to the longitudinal axis (of the housing) and that the edge is an annular beveled ring in communication with the inner peripheral via the outside surface (connected to the inner peripheral surface via the outer surface).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shishido and provide a resin molded housing with the outer peripheral edge ('machined" surface) extending oblique relative to the longitudinal axis or that the outer peripheral edge is annular beveled ring in communication with the inner peripheral surface via the outside surface, as taught by Fujinaka, since it is obvious to a person of ordinary skill to pursue known options within their technical grasp. Fujinaka discloses that it is known to add a bevel to the outer housing and the addition of such a bevel to Shishido does not alter the function of the housing and provides the predictable result of reducing material and weight of the final assembly.

Shishido in view of Fujinaka, as applied above, does not disclose that the outer peripheral edge is a machined edge to remove a resin gate portion.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Shishido in view of Fujinaka and machine the outer peripheral edge after the completion of the molding process, for the predictable result of removing excess material left from the molding process or from a gate location to provide a finished product that will not have burrs or bumps that could interfere with the operation of the rest of the assembly.

Shishido in view of Fujinaka does not disclose that the outside surface of the seal portion is applied with an oil repellent.

Obara teaches an outer surface of a housing (7) which has an oil repellent (30) applied on the outer surface of the sealing portion (top of housing at 28, see Figure 4a) for the purpose of improving the containment of the lubricating oil (paragraph 0096).

It would have been obvious to one having ordinary skill in the art at the time of the invention to provide the outside surface of the seal portion of Shishido with an oil repellent, as taught by Obara, for the purpose of improving the containment of the lubricating oil.

The introduction of an oil repellent on the molded and machined surfaces of Shishido in view of Fujinaka will have a first oil repellency on the molded surface that is greater than a second oil repellency on the machined surface since oil repellents

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applied to machined surfaces have inferior repellency to oil repellents applied to molded surfaces.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. The Applicant's remarks are directed to the newly added claim limitation "the molded surface of the outside surface has a first oil repellency, and the machined surface of the outside surface has a second oil repellency, wherein the first oil repellency is greater than the second oil repellency." This newly added limitation has been rendered obvious in the new grounds of rejection of above and is also rejected under 35 USC 112 1st paragraph.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES PILKINGTON whose telephone number is (571)272-5052. The examiner can normally be reached on Monday - Friday 7-3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571)272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAMES PILKINGTON/
Examiner, Art Unit 3656
4/12/10